



SFUND RECORDS CTR  
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**ICF International / Laboratory Data Consultants**

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**MEMORANDUM**

TO: Matt Mitguard, Site Manager  
Brownfields and Site Assessment Section, SFD-6-1

THROUGH: Rose Fong, ESAT Task Order Manager (TOM) *RF*  
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager *DL*  
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041  
Technical Direction Form No.: 00405112 Amendment 4

DATE: May 12, 2010

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Tujunga SI
Site Account No.:	09 RP QB00
CERCLIS ID No.:	CAN000908605
Case No.:	39372
SDG No.:	MY5QT5
Laboratory:	CompuChem-Liberty Analytical Corp. (LIBRTY)
Analysis:	CLP Total Metals
Samples:	12 Soil (see Case Summary)
Collection Date:	January 7 and 8, 2010
Reviewer:	Kendra DeSantolo, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Cynthia Gurley, CLP PO USEPA Region 4  
Steve Remaley, CLP PO USEPA Region 9

CLP PO: ☒ FYI ☐ Action

SAMPLING ISSUES: ☒ Yes ☐ No

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## Data Validation Report-Tier 3

Case No.: 39372  
SDG No.: MY5QT5  
Site: Tujunga SI  
Laboratory: CompuChem-Liberty Analytical Corp. (LIBRTY)  
Reviewer: Kendra DeSantolo, ESAT/LDC  
Date: May 12, 2010

### I. CASE SUMMARY

#### Sample Information

Samples: MY5QT5, MY5QT6, MY5QT8, MY5QW0,  
MY5QW1, MY5QW2, MY5QW3, MY5QW4,  
MY5QW5, MY5QW6, MY5QW8, and MY5QX2

Concentration and Matrix: Low Concentration Soil

Analysis: CLP Total Metals

SOW: ILM05.4

Collection Date: January 7 and 8, 2010

Sample Receipt Date: January 12, 2010

Preparation Date: January 13 and 14, 2010

Analysis Date: January 14 and 15, 2010

#### Field QC

Field Blanks (FB): None Provided

Equipment Blanks (EB): MY5QT2 and MY5QT3 (See Additional Comments)

Background Samples (BG): None Provided

Field Duplicates (D1): MY5QW2 and MY5QX2

#### Laboratory QC

Method Blank & Associated Samples: Preparation Blank-Soil (PBS) and  
samples listed above

Matrix Spike: MY5QT6S

Duplicate: MY5QT6D

ICP Serial Dilution: MY5QT6L

Analysis: CLP Total Metals

<u>Analytes</u>	<u>Sample Preparation and Digestion Date</u>	<u>Analysis Date</u>
ICP-AES Metals	January 13, 2010	January 14 and 15, 2010
Mercury	January 13, 2010	January 14, 2010
Percent Solids	January 13, 2010	January 14, 2010

#### CLP PO Action

None.

### Sampling Issues

1. The sampler signature was not provided on traffic report and chain of custody (TR/CoC) record form. <sup>the</sup>  
^
2. The field quality control (QC) samples were not sent blind to the laboratory.
3. A temperature indicator bottle was not present in the sample cooler at the time of receipt. The laboratory used a calibrated IR temperature gun to determine the 4.8°C sample temperature.

### Additional Comments

The results for equipment blanks (EB) MY5QT2 and MY5QT3, collected with the samples of this sample delivery group (SDG), on January 7, 2010 and January 8, 2010, respectively, are located in Case: 39372, SDG: MY5QT2. No qualification of data due to equipment blank contamination is warranted.

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW), except as noted, have been met.

Analytical results are listed in Table 1A with qualifications. Definitions of data qualifiers used in Table 1A are provided in Table 1B.

This report was prepared in accordance with the following documents:

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis Multi-Media, Multi-Concentration ILM05.3*, March 2004;
- *ILM05.3 to ILM05.4 Summary of Changes*, December 1, 2006; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

## II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	Yes	
	a. Initial		
	b. Initial and Continuing Calibration Verification		
	c. CRQL Check Standard (CRI)		
4.	Blanks	Yes	B
5.	ICP Interference Check Sample (ICS)	No	C
6.	Laboratory Control Sample (LCS)	Yes	
7.	Duplicate Sample Analysis	Yes	
8.	Matrix Spike Sample Analysis	No	D
9.	ICP Serial Dilution Analysis	No	E
10.	Field Duplicate Sample Analysis	Yes	
11.	Sample Quantitation	Yes	A
12.	Overall Assessment	Yes	

N/A = Not Applicable

## III. VALIDITY AND COMMENTS

- A. Results above the method detection limit (MDL) but below the contract required quantitation limit (CRQL) (denoted with an "L" qualifier) are estimated and flagged "J" in Table 1A.

*Results above the MDL but below the CRQL are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of quantitation.*

- B. The following results are reported as non-detected (U) in Table 1A due to low level preparation blank (PBS) contamination.

- Antimony in samples MY5QT5, MY5QT6, MY5QT8, MY5QW0, MY5QW1, MY5QW2, and MY5QW3
- Sodium in all samples

Analyte amounts greater than the MDL but less than the CRQL were found in the following blanks at the concentrations listed below.

Analyte	Blank	Concentration, mg/kg
Antimony	PBS	0.78
Sodium	PBS	77.9

Affected sample results greater than or equal to the MDL but less than the CRQL are reported as non-detected (U) at the respective CRQL.

*A preparation blank is an analytical control that contains distilled, deionized water, or baked sand for solid matrices, and reagents, which is carried through the entire analytical procedure. The preparation blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.*

- C. The following results are estimated and flagged "J" or "UJ" in Table 1A because sample concentrations of iron exceeded the concentration in the interelement check sample (ICS).
- Cadmium and thallium in all samples
  - Selenium in samples MY5QT5, MY5QT6, MY5QT8, MY5QW0, MY5QW2, MY5QW4, MY5QW5, MY5QW6, MY5QW8, and MY5QX2

Results for the analytes listed above were reported from undiluted analyses that contained iron at concentrations that exceed 120% of the ICSAB solution concentration. Therefore, the instrument applied interelement correction (IEC) factors may not compensate sufficiently for the interference. The results for cadmium and thallium in the samples listed above may be biased high and false positives may exist. The results for selenium in the samples listed above may be biased low and false negatives may exist.

*The ICP ICS solutions A and AB are analyzed to determine the effects of high concentrations of interfering elements on each analyte determined by ICP. Solution A consists of the interferents (Al, Ca, Fe, and Mg), and Solution AB consists of the analytes mixed with the interferents.*

- D. The following results are estimated and flagged "J", "J-", or "UJ" in Table 1A because matrix spike recovery results are outside method QC limits.

- Antimony, manganese, selenium, and zinc in all samples

The matrix spike recovery for the analytes listed above in QC sample MY5QT6S did not meet the 75-125% criterion for accuracy. The percent recovery and possible percent bias for the analytes listed above are presented below and are based on an ideal recovery of 100%.

Analyte	% Recovery	% Bias
Antimony	9	-91
Manganese	73	-27
Selenium	71	-29
Zinc	71	-29

Results above the MDL are considered quantitatively uncertain. Results reported for the analytes listed above in all samples may be biased low.

According to the inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criterion. The following post-digestion spike recovery results for sample MY5QT6A were obtained.

Analyte	Post-Digestion Spike, % Recovery
Antimony	85
Manganese	76
Selenium	78
Zinc	66

Since the post-digestion spike recovery results were acceptable for antimony, manganese, and selenium, the low pre-digestion spike recovery results obtained for these analytes may indicate sample non-homogeneity, poor laboratory technique, or matrix effects which may interfere with accurate analysis. Since the zinc recovery results for both the post- and pre-digestion spikes did not meet the QC criteria, matrix effects may be present in the sample digestate which may suppress the analyte signal during analysis.

*The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.*

E. The following results are estimated and flagged "J" in Table 1A because ICP serial dilution results are outside method QC limits.

- Aluminum, calcium, chromium, iron, lead, magnesium, manganese, nickel, potassium, vanadium, and zinc in all samples

The percent difference for the ICP serial dilution analysis of sample MY5QT6L did not meet the  $\pm 10\%$  criterion for the analytes shown below.

Analyte	% Difference
Aluminum	+16
Calcium	+15
Chromium	+14
Iron	+18
Lead	+20
Magnesium	+18
Manganese	+15
Nickel	+17
Potassium	+17
Vanadium	+13
Zinc	+19

Results reported for the analytes listed above in all samples are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The results for the diluted sample were higher than the original. Therefore, the reported sample results may be biased low.

*A five-fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the MDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.*



## ANALYTICAL RESULTS

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Case No. : 39372

SDG No. : MY5QT5

Table 1A

Site : TUJUNGA WELLFIELD SITE DISCOVERY

Lab : CompuChem - LIBERTY ANALYTICAL CORPORATION (LIBRTY)

Reviewer : Kendra DeSantolo, ESAT/LDC

Date : May 12, 2010

## QUALIFIED DATA

Concentration in mg/kg (Dry Weight)

Analysis Type : Low Concentration Soil Samples  
for CLP Total Metals

Station Location : BSB-01-01				BSB-01-02				BSB-02-01				BSB-03-01				BSB-03-02				BSB-04-01			
Sample ID : MY5QT5				MY5QT6				MY5QT8				MY5QW0				MY5QW1				MY5QW2			
Collection Date : 1/7/2010				1/7/2010				1/8/2010				1/7/2010				1/7/2010				1/7/2010			
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	D1	
ALUMINUM	19300	J	E	23200	J	E	16900	J	E	19000	J	E	16000	J	E	16500	J	E					
ANTIMONY	8.7U	J	BD	10.9U	J	BD	10.7U	J	BD	10.1U	J	BD	10.7U	J	BD	8.9U	J	BD					
ARSENIC	3.2			9.9			7.7			11.2			8.4			7.2							
BARIUM	254			244			279			208			247			197							
BERYLLIUM	0.22L	J	A	0.33L	J	A	0.38L	J	A	0.31L	J	A	0.49L	J	A	0.14L	J	A					
CADMIUM	0.95	J	C	4.6	J	C	6.0	J	C	4.6	J	C	4.9	J	C	2.6	J	C					
CALCIUM	7030	J	E	7530	J	E	7760	J	E	6900	J	E	7000	J	E	7500	J	E					
CHROMIUM	28.9	J	E	43.7	J	E	47.0	J	E	37.4	J	E	39.5	J	E	28.2	J	E					
COBALT	10.5			12.8			12.4			12.8			10.5			10.1							
COPPER	55.0			184			222			223			230			119							
IRON	30200	J	E	34800	J	E	26800	J	E	32600	J	E	25800	J	E	24800	J	E					
LEAD	115	J	E	748	J	E	259	J	E	772	J	E	528	J	E	530	J	E					
MAGNESIUM	7840	J	E	8980	J	E	7320	J	E	7600	J	E	6650	J	E	6980	J	E					
MANGANESE	323	J	DE	361	J	DE	316	J	DE	310	J	DE	302	J	DE	266	J	DE					
MERCURY	0.15U			0.091L	J	A	0.24			0.21			0.25			0.10L	J	A					
NICKEL	25.7	J	E	41.6	J	E	38.4	J	E	43.1	J	E	33.5	J	E	27.9	J	E					
POTASSIUM	5700	J	E	5970	J	E	4920	J	E	5320	J	E	4650	J	E	4780	J	E					
SELENIUM	1.1L	J	ACD	1.7L	J	ACD	1.7L	J	ACD	1.5L	J	ACD	1.6L	J	AD	1.6L	J	ACD					
SILVER	0.093L	J	A	0.49L	J	A	1.5L	J	A	0.42L	J	A	0.59L	J	A	0.20L	J	A					
SODIUM	723U		B	912U		B	891U		B	838U		B	893U		B	742U		B					
THALLIUM	3.3L	J	AC	3.0L	J	AC	1.8L	J	AC	3.1L	J	AC	2.0L	J	AC	0.96L	J	AC					
VANADIUM	57.1	J	E	70.9	J	E	54.6	J	E	59.5	J	E	56.3	J	E	48.8	J	E					
ZINC	148	J-	DE	550	J-	DE	708	J-	DE	586	J-	DE	699	J-	DE	353	J-	DE					
Percent Solids	68.5%			54.8%			55.0%			59.1%			56.0%			66.1%							

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

MDL - Method Detection Limit

N/A - Not Applicable NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

CRQL - Contract Required Quantitation Limit

## ANALYTICAL RESULTS

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Case No. : 39372

SDG No. : MY5QT5

Table 1A

Site : TUJUNGA WELLFIELD SITE DISCOVERY

Lab : CompuChem - LIBERTY ANALYTICAL CORPORATION (LIBRTY)

Reviewer : Kendra DeSantolo, ESAT/LDC

Date : May 12, 2010

## QUALIFIED DATA

Concentration in mg/kg (Dry Weight)

Analysis Type : Low Concentration Soil Samples  
for CLP Total Metals

Station Location : BSB-04-02 Sample ID : MY5QW3 Collection Date : 1/7/2010				BSB-05-01 MY5QW4 1/7/2010			BSB-05-02 MY5QW5 1/7/2010			BSB-06-02 MY5QW6 1/8/2010			BSB-07-01 MY5QW8 1/8/2010			BSB-09-01 MY5QX2 1/7/2010			D1
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	
ALUMINUM	17300	J	E	18100	J	E	22400	J	E	21500	J	E	21000	J	E	16400	J	E	
ANTIMONY	11.6U	J	BD	8.6U	J	D	9.5U	J	D	9.9U	J	D	9.3U	J	D	9.1U	J	D	
ARSENIC	10.6			2.9			6.3			6.2			5.5			7.6			
BARIUM	275			255			255			224			231			208			
BERYLLIUM	0.45L	J	A	0.17L	J	A	0.33L	J	A	0.24L	J	A	0.28L	J	A	0.16L	J	A	
CADMIUM	7.7	J	C	0.42L	J	C	1.5	J	C	2.0	J	C	1.2	J	C	2.3	J	C	
CALCIUM	7350	J	E	7800	J	E	7830	J	E	7510	J	E	6920	J	E	7720	J	E	
CHROMIUM	47.4	J	E	25.1	J	E	31.5	J	E	33.7	J	E	30.6	J	E	30.3	J	E	
COBALT	12.4			10.4			10.4			10.4			9.4			10.0			
COPPER	489			47.4			69.7			103			74.9			130			
IRON	27700	J	E	25400	J	E	30100	J	E	30400	J	E	27500	J	E	25800	J	E	
LEAD	529	J	E	49.7	J	E	225	J	E	411	J	E	237	J	E	536	J	E	
MAGNESIUM	7210	J	E	7570	J	E	8200	J	E	8120	J	E	7910	J	E	7340	J	E	
MANGANESE	318	J	DE	275	J	DE	354	J	DE	318	J	DE	290	J	DE	282	J	DE	
MERCURY	0.49			0.068L	J	A	0.18			0.085L	J	A	0.15L	J	A	0.17			
NICKEL	41.9	J	E	22.8	J	E	29.9	J	E	29.5	J	E	26.7	J	E	26.8	J	E	
POTASSIUM	4920	J	E	5470	J	E	5730	J	E	5470	J	E	5420	J	E	5250	J	E	
SELENIUM	2.6L	J	AD	1.5L	J	ACD	2.0L	J	ACD	2.0L	J	ACD	1.9L	J	ACD	1.6L	J	ACD	
SILVER	1.4L	J	A	1.4U			1.6U			1.6U			1.6U			0.18L	J	A	
SODIUM	971U		B	715U		B	793U		B	821U		B	778U		B	761U		B	
THALLIUM	1.4L	J	AC	2.0L	J	AC	2.3L	J	AC	1.8L	J	AC	2.1L	J	AC	1.7L	J	AC	
VANADIUM	56.8	J	E	52.0	J	E	68.1	J	E	63.4	J	E	62.3	J	E	48.9	J	E	
ZINC	1130	J	DE	111	J	DE	184	J	DE	285	J	DE	193	J	DE	399	J	DE	
Percent Solids	51.0%			69.9%			61.8%			59.7%			61.2%			63.8%			

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

MDL - Method Detection Limit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

CRQL - Contract Required Quantitation Limit

## ANALYTICAL RESULTS

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Case No. : 39372

SDG No. : MY5QT5

Table 1A

Site : TUJUNGA WELLFIELD SITE DISCOVERY

Lab : CompuChem - LIBERTY ANALYTICAL CORPORATION (LIBRTY)

Reviewer : Kendra DeSantolo, ESAT/LDC

Date : May 12, 2010

## QUALIFIED DATA

Concentration in mg/kg (Dry Weight)

Analysis Type : Low Concentration Soil Samples  
for CLP Total Metals

	MDL			CRQL														
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	3.0			20.0														
ANTIMONY	0.15			6.0														
ARSENIC	0.19			1.0														
BARIUM	0.57			20.0														
BERYLLIUM	0.026			0.50														
CADMIUM	0.065			0.50														
CALCIUM	5.9			500														
CHROMIUM	0.075			1.0														
COBALT	0.40			5.0														
COPPER	0.069			2.5														
IRON	1.5			10.0														
LEAD	0.16			1.0														
MAGNESIUM	5.7			500														
MANGANESE	0.044			1.5														
MERCURY	0.045			0.10														
NICKEL	0.098			4.0														
POTASSIUM	4.4			500														
SELENIUM	0.26			3.5														
SILVER	0.062			1.0														
SODIUM	12.0			500														
THALLIUM	0.30			2.5														
VANADIUM	0.16			5.0														
ZINC	0.081			6.0														

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

MDL - Method Detection Limit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

CRQL - Contract Required Quantitation Limit

**TABLE 1B**

**DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW**

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

- U     The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J     The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+    The result is an estimated quantity, but the result may be biased high.
- J-    The result is an estimated quantity, but the result may be biased low.
- R     The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
- UJ    The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

